## REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 73-85 and 90-107 are now pending in this application, with Claims 73, 90, and 99 being independent. By this Amendment, Applicant has canceled Claims 50-72 and 86-89, amended the specification and Claim 73, and added new Claims 90-107. No new matter has been added.

Claims 50-64, 70-72, and 86-89 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,760,436 (Yi Zi) in view of Japanese Laid-Open Patent Application No. 62-200225 (Ishizuka). Claims 61-64 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yi Zi and Ishizuka in view of U.S. Patent No. 5,483,059 (Igaki). Applicant traverses these rejections.

Initially, Applicant would like to thank the Examiner for acknowledging that Claims 73-85 contain allowable subject matter, and would be allowed if amended to attend to various formal matters. Applicant has amended Claims 73 to attend to the formal matters set forth in the Office Action.

As recited in independent 90, Applicant's invention is directed to a rotation detection apparatus having first and second members disposed rotatable relative to each other, with a light source being fixed to the first member. Light deflection means is provided on the second member in order to deflect a beam from the light source, in accordance with the relative rotation, to form two beams. A ring-like sensor is provided on the first member to receive the two beams. Arithmetic means calculates rotation angles of the two beams, wherein a decentered amount between the rotation center of the two beams and a center of the ring-like sensor is corrected.

As recited in independent Claim 99, Applicant's invention is directed to a rotation detecting apparatus similar to that recited Claim 90; however, instead of a ring-like sensor,

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a two-dimensional position sensor is provided on the first member. That sensor receives the two beams and detects an incident position. The arithmetic means calculates an angle formed between a straight line linking together two incidents positions of the two beams on the two-dimensional position sensor and a predetermined reference line.

Yi Zi is directed to a photoelectric transducer in which light beams emitted from two light sources (which rotate together) are received by a circular sensor for position detection. Applicant submits, however, that Yi Zi fails to suggest correcting a decentered amount between the rotation center of the two beams and the center of a ring-like sensor.

Ishizuka is directed to a light-interference-type rotary encoder. In the encoder described in that document, a light beam is emitted onto a position facing a disk-like rotation diffraction grating. A respective moving amount is measured through interference in the reflected light beam. That document also describes normalizing signals from facing positions so as to correct the decentering of the rotating detection grating. Ishizuka, however, fails to suggest that illumination positions of light beams rotate. Furthermore, the encoder corrects the shift of the rotation center of the diffraction grating. On the contrary, with respect to Claim 90, Applicant's invention detects the shift between the rotation center of the two beams and the center of the ring-like sensor; and with respect to independent Claim 99, Applicant's invention detects the angle formed between the straight line linking together two incident positions of the two beams on the two-dimensional position sensor and the predetermined reference line.

Igaki is merely cited as describing a reflecting surface formed of a plurality of patterns of a predetermined cross-sectional shape. Applicant notes that Igaki describes a light encoder for obtaining a displacement signal of which the period is twice the interval of the gratings, by transmitting light through a cylinder-like diffraction grating. The encoder described therein does not have a disk-like sensor or rotating light beams.

Accordingly, Applicant submits that <u>Yi Zi</u>, <u>Ishizuka</u>, and <u>Igaki</u>, taken alone or in combination, fail to disclose or suggest at least the features of light deflection means provided on a second member, for deflecting a beam from a light source fixed on a first member (in accordance with relative rotation with respect to the first member) to form two beams of which illuminating points rotate on concentric circles to form a circle or an arc; a ring-like sensor which is provided on the first member and receives the two beams; and calculating rotation angles of the two beams, wherein a decentered amount between a rotation center of the two beams and a center of the ring-like sensor is corrected, as recited in independent Claim 90. In addition, Applicant submits that those documents fail to disclose or suggest at least the features of light deflection means provided on a second member, for deflecting a beam from a light source on a first member (in accordance with relative rotation with respect to the first member) to form two beams of which illuminating points rotate on concentric circles to form a circle or an arc; a two-dimensional position sensor which is provided on the first member, receives the two beams, and detects an incident position; and calculating an angle formed between a straight line linking together two incident positions of the two beams on the two-dimensional position sensor and a predetermined reference line, as recited in independent Claim 99.

The remaining claims in this application are dependent claims which depend from the above-described independent claims. The dependent claims are believed allowable by virtue of this dependency, and for reciting other patentable features of the invention. Favorable and independent reconsideration of the dependent claims are requested.

For the foregoing reasons, Applicant requests withdrawal of the rejections under 35 U.S.C. §103, and allowance of this application.

Applicant's undersigned attorney may be reached in our Washington D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

Justin J. Oliver
Attorney for Applicant
Registration No. 44,986

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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